

Seven new species of the *Xestomyza*-group of Therevidae (Diptera) from South Africa

by

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SYNOPSIS

Three species are described in the genus *Microgephyra* Lyneborg, 1972, viz. *latipennis* sp. nov., *irwini* sp. nov., and *transvaalensis* sp. nov., bringing the number of known species in this genus up to 10. A further species, *bidentata* sp. nov., is described in the genus *Pentheria* Kröber, 1931, which now contains nine known species. Of the hitherto monobasic genus *Braunsophila* Kröber, 1931, is described a further three species: *latifrons* sp. nov., *tomentosa* sp. nov., and *signata* sp. nov. These three species are closely related and originate from the western Cape Province.

INTRODUCTION

A revision of the *Xestomyza*-group of Therevidae was recently published (Lyneborg 1972). Since then a further seven undescribed species have turned up. Some of them have been collected in the last few years by Dr B. R. and Mrs P. Stuckenberg and Dr M. E. and Mrs B. J. Irwin. Others originate from hitherto unsorted material in the Transvaal Museum, which became available through the assistance of Dr Irwin. The types are deposited in the Natal Museum, Pietermaritzburg (NM), and so is the material formerly in the Transvaal Museum, Pretoria (TM); some paratypes are in the Zoological Museum, Copenhagen (ZMC).

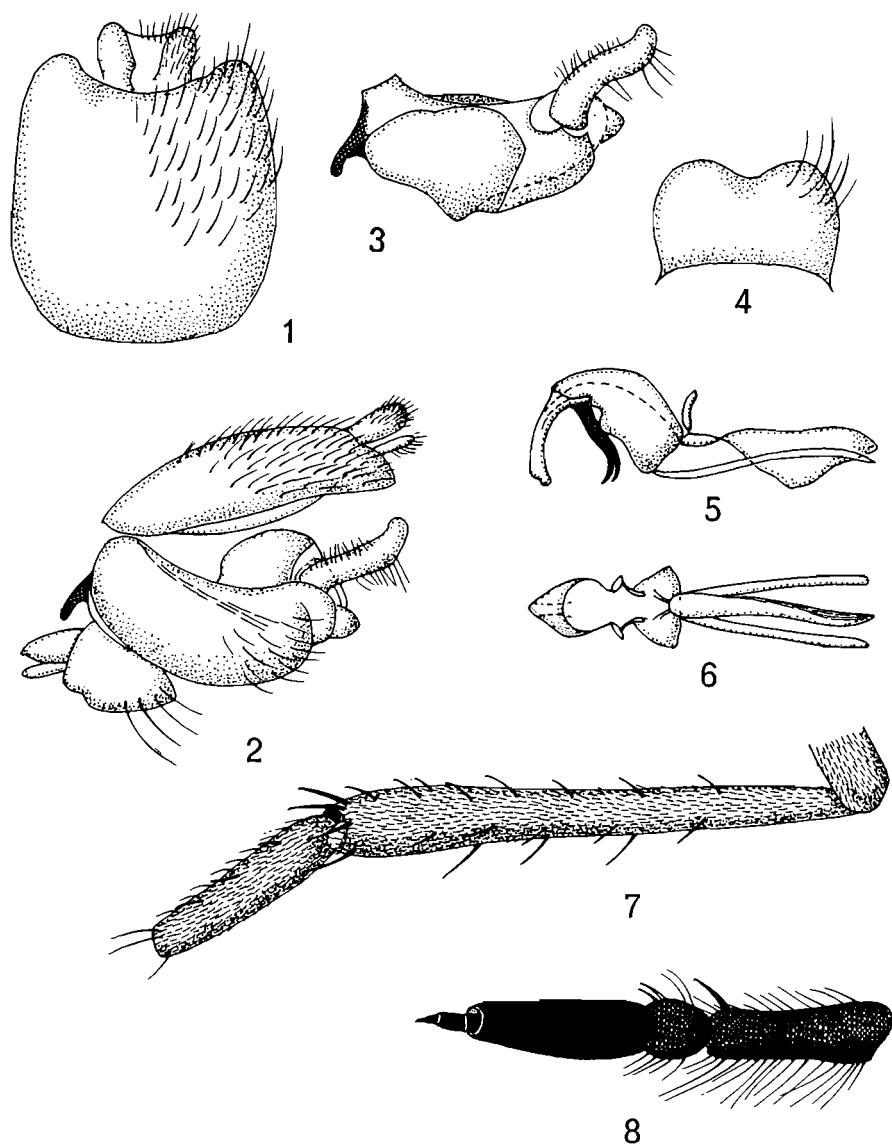
Genus *Microgephyra* Lyneborg, 1972

Microgephyra latipennis sp. nov. (Figs 1-8)

Description. Male, holotype.

Head. Frons very narrow, at its narrowest point the eyes are only separated by half width of anterior ocellus. Facets on lower fourth of eye small and sharply demarcated from the larger facets on the upper part. Antennae (fig. 8) very similar in length, dimensions and orientation to those of *grandis* Lyn. (cf. Lyneborg 1972: fig. 19). Proboscis reaches well beyond level of antennal bases. Palpi not reaching to apex of proboscis. Frons greyish tomented, lower raised part subshining blackish and with some black hairs. Rest of head greyish tomented, but upper occiput partly subshining blackish. Face laterally with a row of black hairs. Genae and lower occiput with mainly pale hairs. About 15 postocular setae. Antennae blackish-brown, first segment thinly greyish tomented, its pile black and equal in length to width of segment.

Thorax. Mesonotum with a broad black middle band. Laterally to this two bands of pale greyish tomentum, and laterally to these the mesonotum is blackish. The pattern is, however, not sharply demarcated. Dc setae absent, pile rather long and pale. Scutellum and pleura blackish, partly subshining, partly greyish tomented.



Figs 1-8. *Microgephyra latipennis* sp. nov. (1) epandrium; (2) terminalia in lateral view; (3) gonocoxite seen from inside; (4) sternite 8; (5) aedeagus in lateral view; (6) aedeagus in dorsal view; (7) left hind tibia and metatarsus; (8) antenna.

Wings. Coloration greyish-hyaline, costal and subcostal cells with a slight brownish tinge. Veins strong and blackish. Halteres yellowish.

Legs. Coxae blackish with greyish tomentum. Rest of legs pale yellowish-brown, tarsi only slightly darkened towards apex. Hind tibia (fig. 7) distinctly dilated towards apex. Chaetation as described for the genus.

Abdomen. Totally black, central parts of tergites dulled by a dark brownish tomentum. Pile sparse and mostly whitish.

Terminalia (figs 1-6). Brownish-black and with black pile. Gonocoxite without stronger setae. Stylus shaped as a slightly curved finger, without processes. Phallic part of aedeagus with a long, narrow extension, and between this and the proximal part of phallus two additional sclerites shaped as strong spines.

Total length about 6 mm.

Material. Holotype, ♂, SOUTH AFRICA, Waterberg District, Plat River, 6-18 April 1905, C. Swierstra (TM). NM type no. 1932.

Remarks. This new species together with the following new species can be separated from other known species of *Microgephyra* by the shape of the antennae, first and third antennal segments being nearly equal in length. A similar antennal ratio occurs only in *grandis* Lyn. (only ♀ known), but this species has the mesonotum and scutellum yellowish-brown to reddish-yellow, and is a larger species (about 8,4 mm in total length). Also the narrow male frons separates the two species from all other species except *stylata* Lyn. and *transvaalensis* sp. nov., which are holoptic.

***Microgephyra irwini* sp. nov. (Figs 9-12)**

Description. Male, holotype.

Head. Frons very narrow, at its narrowest point the eyes are separated by slightly less than the width of anterior ocellus. Facets on lower fourth of eye small and sharply demarcated from the larger facets on upper parts. Antennae (fig. 12) with third segment slightly longer than first segment. Proboscis reaches to level of middle of first antennal segment. Palpi nearly as long as proboscis. Frons pale greyish tomented, on middle of lower raised part with a triangular polished black callus. A broad median stripe on face from antennal bases down to buccal cavity also polished black. Lateral areas of face, genae and lower occiput pale greyish tomented. Upper occiput very concave and subshining brownish-black. Lower frons with a few short black hairs. Face bare. Genae and lower occiput with short pale pile. Upper occiput with about 12 short but strong occipital setae on each side. First and second antennal segments brownish-black with thin grey tomentum. Third segment totally black. Palpi brownish-black.

Thorax. Mesonotum on disc greyish-brown tomented, on middle with two indistinctly separated dark brownish stripes. Lateral areas of mesonotum blackish and partly shining. One pair of dc setae. Scutellum and pleura blackish, most of pleura with a grey tomentum. Thoracic pile sparse and pale.

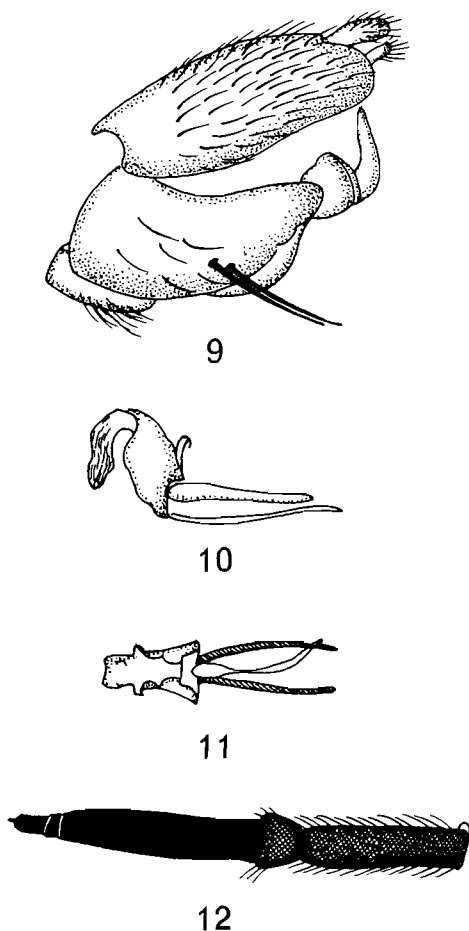
Wings. Coloration greyish-hyaline with strong, dark brownish veins. Halteres yellowish.

Legs. Coxae greyish-black as pleura. Femora and tibiae yellowish-brown, front tibia darkened at apex. Tarsi yellowish-brown and darkened towards apex. Chaetotaxy as described for the genus.

Abdomen. Totally black, partly polished, dorsal parts of tergites dulled by a thin greyish-brown tomentum. Pile short and pale.

Terminalia (figs 9-11). Brownish-black and with black pile. Gonocoxite with 2 strong setae and a few additional shorter setae. Stylus with a stout proximal part and terminating into a strong upcurved, horn-like process. Phallic part of aedeagus weakly sclerotized, slender and downcurved.

Total length about 5,5 mm.

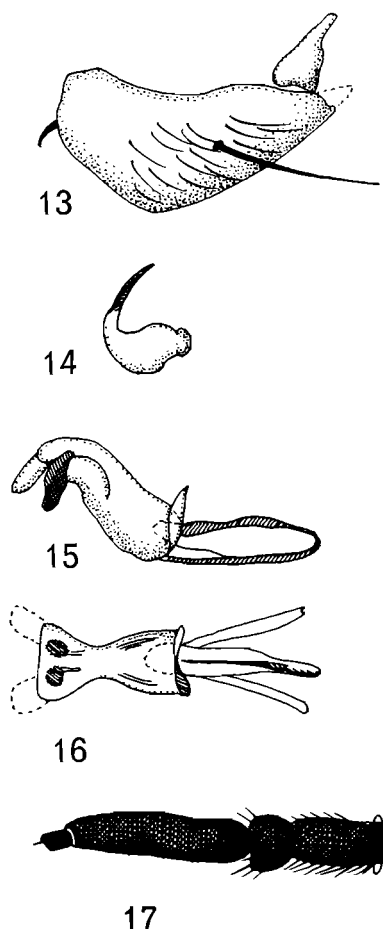


Figs 9-12. *Microgephyra irwini* sp. nov. (9) terminalia in lateral view; (10) aedeagus in lateral view; (11) aedeagus in dorsal view; (12) antenna.

Female. Frons broadly polished black on middle, this polished band continuing also on face down to buccal cavity. Laterally on frons and face a stripe of pale greyish tomentum. Upper occiput polished black. Antennae with same dimensions as in male. Colour of rest of head as in male. Thorax coloured as in male, but pile very short and black, and dc setae absent. Wings darker in ground coloration and with an indistinct darker band apical and anterior to discal cell. Also legs darker than in male, especially femora and front tibia which are partly brownish-black. Abdomen coloured as in male. Total length about 6,5 mm.

Material. Holotype, ♂, SOUTH AFRICA, Cape Province, Paterson, 300 m, sand dunes, 15 March 1972, M. E. & B. J. Irwin (NM); paratypes, 2 ♀, same data as holotype. NM type no. 1933.

Remarks. *M. irwini* is probably rather closely related to *latipennis* described above. The two species have about the same proportions in the antennae and the same very



Figs 13–17. *Microgephyra transvaalensis* sp. nov. (13) gonocoxite in lateral view; (14) stylus; (15) aedeagus in lateral view; (16) aedeagus in dorsal view; (17) antenna.

narrow male frons. However, *irwini* differs in the clear brownish-grey tomentum on mesonotum, in the normal shape of the hind tibia and in the different male terminalia.

***Microgephyra transvaalensis* sp. nov. (Figs 13–17)**

Description. Male, holotype.

Head. Eyes absolutely touching for a short distance. Facets on upper two-thirds of eyes enlarged and sharply demarcated from the lower facets. Antennae (fig. 17) with third segment twice as long as first segment and slightly wider. Proboscis reaches to level of antennal bases. Palpi nearly as long as proboscis. Frons greyish tomented, lower raised part shining blackish on middle. Face, genae and occiput mostly black and shining, only greyish tomented in a stripe along eye-margin. Frons and face bare. Genae and lower occiput mostly with dark pile. About 10 short postocular setae on each side. Antennae and palpi blackish-brown, pile of first antennal segment very short and sparse.

Thorax. Mesonotum subshining blackish with thin greyish tomentum and two narrow and indistinctly marked stripes of a pale greyish coloration. Pile very short and black. One pair of dc setae. Scutellum deep matt black. Pleura black, subshining to shiny, only sternopleura with a distinct grey tomentum.

Wings. Ground coloration greyish-hyaline. Stigma black. Basal half of the area distal to discal cell with a faint brownish-black band. A more indistinct and narrower band over wing basad of discal cell. Halteres blackish.

Legs. Coxae blackish-grey like pleura. Front and mid femora black with apical fourth more yellowish-brown. Hind femora black with extreme apex yellowish-brown; its tarsus black. Mid tibia and its tarsus yellowish-brown, but last tarsal segments blackish. Hind tibia black with extreme base yellowish-brown; its tarsus yellowish-brown and blackish distally. Chaetotaxy as described for the genus.

Abdomen. Totally blackish and shining to subshining; a dark brownish tomentum visible in frontal view. Pile very sparse and short.

Terminalia (figs 13–16). Blackish with black pile. Gonocoxite with a strong seta in addition to the normal shorter pile. Stylus with a stout base and terminating into a long slender projection, which is curved inwards. Aedeagus as in figs 15, 16.

Total length about 5,5 mm.

Female. Head. Frons occupying about $\frac{1}{3}$ of total width of head. Upper half of frons black, transversally wrinkled and therefore appearing dull. Lower raised part of frons polished black. Rest of head as in male, but antennae apparently paler brownish. Thorax as in male. Wings much darker than in male. Whole wing more or less intensively brownish-black tinged, leaving only a band over distal half of discal cell semihyaline. Legs on the other hand paler than in male. Front femora yellowish-brown. Mid and hind femora blackish-brown in basal half, yellowish-brown on apical half. Mid tibia and its tarsus yellowish-brown. Hind tibia blackish-brown. Abdomen as in male.

Material. Holotype, ♂, SOUTH AFRICA, Transvaal, Kruger Park, Nwamuriwa Mountain summit 6 km NE of Tshokwane, 6 Jan. 1974, B. & P. Stuckenberg (NM); paratypes, Kruger Park, 3 ♂, 1 Jan. 1969, Pienaar (NM & ZMC); Moselekaats Nek, 1 ♂, 10 Jan. 1923, C. J. Swierstra (TM). NM type no. 1934.

Remarks. This new species is certainly closely related to *M. stylata* Lyn. from South West Africa. Both can be separated from all other known species of *Microphyra* in possessing holoptic males. This character and also the shape of the stylus and aedeagus show the close relationship between *transvaalensis* and *stylata*. The two species can be separated by enlarged upper facets in *transvaalensis*. In *stylata* the antennae are yellowish-brown, while they are blackish-brown in *transvaalensis*.

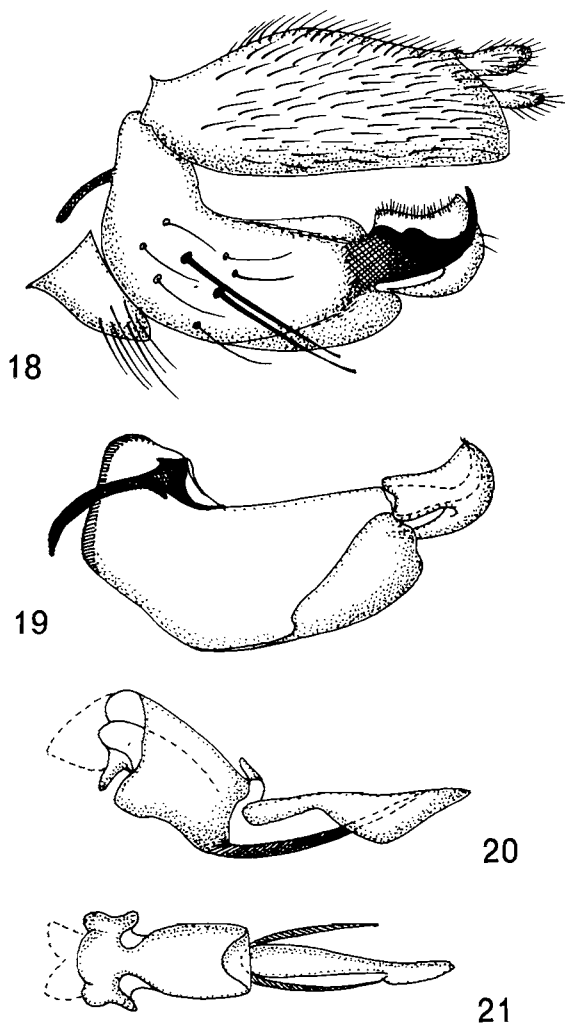
Genus *Pentheria* Kröber, 1931

Eight species were hitherto known of this genus (Lyneborg 1972: 324–40). An additional new species is described below from Pretoria, Transvaal. Two females of an apparently undescribed species are at hand from South West Africa, but a description must await the capture of the male sex; the genus was unknown from that area.

***Pentheria bidentata* sp. nov.** (Figs 18-21)

Description. Male, holotype.

Head. Eyes not completely touching, this usual in *Pentheria*, but separated by a distance equal to half width of anterior ocellus. Longitudinal axis of antenna and profile of frons forming a straight line. Upper facets not distinctly larger than lower facets. Lateral view of head and antennae very similar to *P. alternans* (Lw.) (cf. Lyneborg 1972: fig. 73). Whole head dull blackish-grey, but coloration in the only specimen available certainly somewhat unnatural due to moisture. Antennae and palpi blackish-brown.



Figs 18-21. *Pentheria bidentata* sp. nov. (18) terminalia in lateral view; (19) gonocoxite seen from inside; (20) aedeagus in lateral view; (21) aedeagus in dorsal view.

Thorax. All parts appear dull blackish-grey. Pile hardly visible.

Wings. Whole part distal of discal cell and also including extreme apex brownish-grey. A semi-hyaline band occurs over apical half of discal cell, and basad of this semi-hyaline band is seen a brownish-grey band similar in coloration to the apical part.

Legs. Coxae brownish-black with thin tomentum. Femora dark brownish to nearly brownish-black on hind femur. Tibiae and tarsi yellowish-brown, but hind tibia darker brownish.

Abdomen. All segments appear uniformly blackish-brown.

Terminalia (figs 18–21). Coloration and pile blackish as usual in the genus. Gonocoxite in lateral view with a strong dorsal process terminating into a long, upcurved and very pointed projection. Below with a low 'shelf' dorsally of which a pointed process from the stylus projects.

Total length about 6 mm.

Material. Holotype, ♂, SOUTH AFRICA, Transvaal, Pretoria, 12 Dec. 1926, H. K. Munro (TM). NM type no. 1935.

Remarks. This new species belongs to a group also containing *alternans* (Lw.), *septentrionalis* Lyn. and *uncinata* Lyn. All are characterized by the straight profile-line of frons and antennae, and by the blackish-brown coxae. Small differences in wing-pattern may not be constant enough to secure separation, but the male terminalia, especially the structures formed by the posterior part of the gonocoxite, are entirely different in the four species.

Genus *Braunsophila* Kröber, 1931

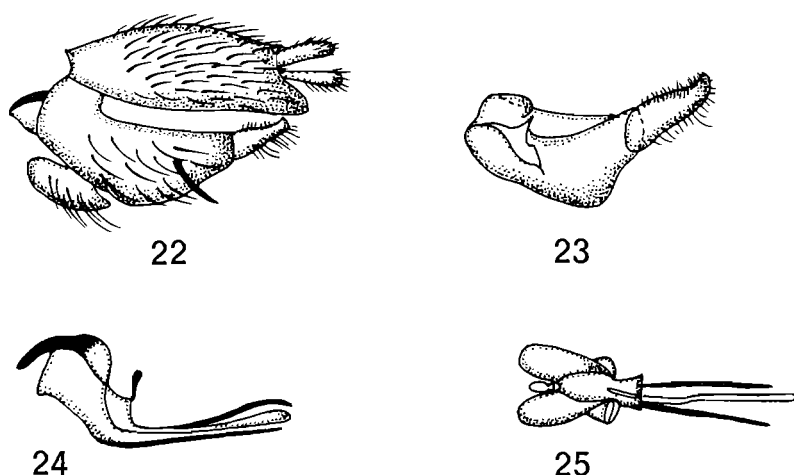
Of this genus was hitherto known only the type-species, *nubeculipennis* Kröber, 1931, which is distributed in the southern Cape Province from Mossel Bay eastwards to the Albany district. Recent collecting in the north-western Cape Province by Dr M. E. Irwin and his wife Bonnie has revealed three unknown species which are described below as *latifrons* sp. nov., *tomentosa* sp. nov. and *signata* sp. nov. These three new species are closely related and certainly together form the sister-group to *nubeculipennis* of the southern Cape Province. Synapomorphous characters for the western Cape Province group of species are as follows: occiput cushion-shaped dilated dorsally, dorsocentral setae present in a full row and clearly distinct from the normal pile, wings with a reticulate pattern and stylus shortened (its proximal part being reduced) and seemingly having a rather immovable position on the apex of the gonocoxite (cf. figs 22, 23).

The species can be separated by some minor differences in coloration and frontal width as given in the key below. The interspecific differences in the male terminalia are small and mainly confined to the aedeagus itself (cf. figs 24–29).

Key to species of *Braunsophila* Kröber

♂

1. Wing practically uniformly brownish coloured. Mesonotum with pile of long black hairs of equal length; their length equals length of third antennal segment
***nubeculipennis* Kröb.**



Figs 22–25. *Braunsophila latifrons* sp. nov. (22) terminalia in lateral view; (23) gonocoxite seen from inside; (24) aedeagus in lateral view; (25) aedeagus in dorsal view.

- Wing brownish with whitish-hyaline pattern. Mesonotum with two rows of strong dc setae, the length of which distinctly exceeds length of third antennal segment and of the normal mesonotal pile.....2
- 2. Distance between eyes in front of anterior ocellus nearly twice as long as distance between exterior margins of upper ocelli.....*latifrons* sp. nov.
- Distance between eyes in front of anterior ocellus 0,8–1,3 times as long as distance between exterior margins of upper ocelli.....3
- 3. Abdomen distinctly brownish-grey tomented, especially laterally. Upper frons greyish-brown.....*tomentosa* sp. nov.
- Abdomen blackish. Upper frons dark brown.....*signata* sp. nov.

♀

1. Wings practically uniformly brownish coloured. Mesonotum with fine but distinct, dc setae, which are shorter than length of third antennal segment.....
nubeculipennis Kröb.
- Wings brownish with whitish-hyaline pattern. Mesonotum with two rows of strong dc setae, the length of which distinctly exceeds length of third antennal segment.....2
2. Lower raised part of frons with a well-marked polished black triangular callus. Dorsal areas of tergites 1–3 subshining dark brownish, of tergites 4–7 polished black.....*signata* sp. nov.
- Lower raised part of frons without polished black triangular callus, but often subshining laterally.....3
3. Dorsal areas of tergites 1–2 subshining brownish-grey, of tergites 3–7 polished black. Lateral areas of tergites 3–7 brownish-grey tomented...*tomentosa* sp. nov.
- Dorsal areas of tergites 1–3 subshining brownish-grey, of tergites 4–7 polished black. Lateral areas of tergites 4–7 not distinctly tomented...*latifrons* sp. nov.

Braunsophila latifrons sp. nov. (Figs 22–25, 30)

Description. Male, holotype.

Head. Frons broad, about 1.8 times as wide as distance between outer margins of upper ocelli, and nearly $\frac{1}{3}$ as wide as total width of head. First antennal segment with a ratio of 28 : 7, and third antennal segment (including style) with a ratio of 22 : 8. Ratio of third segment proper to style is 18 : 4. Upper frons dark brown; lower raised part of frons partly shining blackish, but grey tomented centrally, laterally and above antennal bases. Area next to antennal bases deep black. Face, genae and occiput grey tomented. Upper occiput partly subshining and more cushion-shaped than in the type-species. Postocular setae rather few and arranged in 3–4 rows. Palpi and antennae black, first segment hardly tomented when seen in dorsal view.

Thorax. Mesonotum with five pairs of dc setae, which are longer than length of third antennal segment and twice as long as the normal sparse pile. Mesonotum brownish-grey with four narrow blackish-brown stripes, the lateral pair of which is interrupted. Pleura grey tomented, but dark brown above. Scutellum greyish-black.

Wings as in fig. 30.

Legs. Front tibia with one pd and two pv setae. Mid tibia with 2–3 setae in all four positions. Hind tibia with 2–4 ad, pd and av setae. Coxae grey tomented as pleura. Femora black, with sparse and very short pile. Tibiae more brownish, but extensively darkened apically. Tarsi blackish.

Abdomen. Tergites uniformly blackish, subshining due to a thin dark brownish tomentum. Sternites more polished black. Pile sparse and yellowish on first segments, black on last segments.

Terminalia (figs 22–25). Dark brownish to blackish with black pile.

Total length about 4.5 mm.

Female. Head. Frons broader than in male, occupying $\frac{2}{3}$ of total width of frons. Its colour nearly totally dark brown, and only with very sparse indications of greyish tomentum laterally. Mesonotum with more marked blackish-brown stripes and shorter pile. Abdomen practically all shining black, only slightly dulled by dark brown tomentum centrally on the first three tergites. Otherwise as described for male.

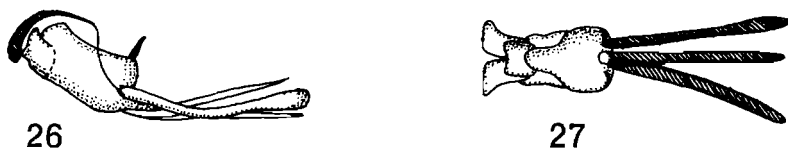
Material. Holotype, ♂, SOUTH AFRICA, Cape Province, Papendorp, at mouth of Olifants River, coastal dunes, 11 Sept. 1972, M. E. Irwin (NM); paratypes, 2 ♂ 1 ♀, same data as holotype (NM & ZMC). NM type no. 1936.

Remarks. A female with the same data as the above-mentioned type-series is not labelled as paratype. It differs in certain characters and may represent a distinct species.

Braunsophila tomentosa sp. nov. (Figs 26, 27, 31)

Description. Male, holotype.

Head. Frons about 1.3 times as wide as distance between outer margins of upper ocelli, and $\frac{1}{2}$ as wide as total width of head. First antennal segment with a ratio of 26 : 7, and third antennal segment (including style) with a ratio of 21 : 10. Ratio of third segment proper to style is 17 : 4. Frons greyish tomented, below with a slight brownish tinge. Lower raised part of frons partly subshining black. Area next to



Figs 26–27. *Braunsophila tomentosa* sp. nov. (26) aedeagus in lateral view; (27) aedeagus in dorsal view.

antennal bases deep black. Face, genae and occiput grey tomented. Upper occiput cushion-shaped and with 3–4 rows of rather long and strong postocular and occipital setae. Palpi and antennae black, first segment distinctly grey tomented in dorsal view.

Thorax. Mesonotum with two rows of 5–6 dc setae, which are longer than length of third antennal segment and nearly twice as long as the normal pile. Mesonotum and scutellum greyish, on middle with brownish-black stripes which are more or less confluent. Laterally three brownish-black spots in a row, and supra-alar area black. Pleura grey.

Wings as in fig. 37.

Legs. Front tibia with 1–2 pd and 2–3 pv setae, and very short ad setae also present. Mid and hind tibiae with the usual chaetotaxy. Coxae grey as pleura. Femora black. Tibiae brownish with blackish apices. Tarsi blackish.

Abdomen. Tergites brownish-black and subshining on middle, becoming more greyish tomented laterally. Sternites blackish. Pile sparse and whitish on first segments, black on last segments.

Terminalia (figs 26, 27). Colour brownish with black pile. Very similar to *latifrons*, but stylus slightly more slender, and small differences in shape of aedeagus.

Total length about 4,8 mm.

Female. Head. Frons broader than in male, occupying $\frac{2}{3}$ of total width of head, and greyish or more or less brownish tomented. Mesonotal pile shorter than in male, but dorsocentrals still very marked. Wings more distinctly maculated than in male. Legs with same chaetotaxy as in male, but colour of femora varies from brownish to nearly blackish, often darkest dorsally. Tergites 1–2 brownish-grey and subshining. Tergites 3–7 with a broad shining black band of equal width on middle, while lateral parts of the same tergites and also the sternites are greyish-brown tomented. Posterior segments more yellowish-brown. Total length about 6 mm.

Material. Holotype, ♂, SOUTH AFRICA, Cape Province, 17,6 km. NNE Hondeklipbaai, 60 m alt., reddish sand with shrubs, 8 Sept. 1972, M. E. & B. J. Irwin (NM), paratypes, 10 ♂ 11 ♀, same data as holotype (NM & ZMC). NM type no. 1937.

***Braunsophila signata* sp. nov. (Figs 28, 29, 32)**

Description. Male, holotype.

Head. Frons about 0,8 times as wide as distance between outer margins of upper ocelli, and $\frac{1}{6}$ as wide as total width of head. First antennal segment with a ratio of 28 : 7, and third antennal segment (including style) with a ratio of 23 : 10. Ratio of third segment proper to style is 18 : 5. Frons dark greyish brown above, below on the raised part subshining blackish and grey tomented laterally and below. Area



28



29

Figs 28-29. *Braunsophila signata* sp. nov. (28) aedeagus in lateral view; (29) aedeagus in dorsal view.

next to antennal bases deep black. Face, genae and occiput grey tomented. Upper occiput cushion-shaped and with 3-4 rows of rather long and strong postocular and occipital setae. Palpi and antennae black. First segment hardly tomented in dorsal view.

Thorax. Mesonotum with two rows of 4-5 dc setae, which are longer than length of third antennal segment and at least twice as long as normal pile. Mesonotum with broad brownish-black middle band nearly occupying the total space between the rows of dorsocentrals. Lateral to this band the mesonotum is brownish-grey tomented



30



31



32

Figs 30-32. Wings of *Braunsophila*. (30) *B. latifrons* sp. nov.; (31) *B. tomentosa* sp. nov.; (32) *B. signata* sp. nov.

with an interrupted brownish-black stripe. Scutellum and supra-alar area brownish-black. Pleura greyish.

Wings as in fig. 32.

Legs. Chaetotaxy and coloration as in *tomentosa*.

Abdomen. Tergites and sternites uniformly blackish-brown, subshining due to a thin dark brownish tomentum. Pile sparse and partly yellowish, partly blackish.

Terminalia (figs 28, 29). Colour brownish with black pile. Stylus as in *tomentosa* more slender than in *latifrons* (cf. fig. 23), and also small differences in shape of aedeagus.

Total length about 4.5 mm.

Female. Head. Frons broader than in male, occupying $\frac{4}{5}$ of total width of head. Most of upper frons dark brownish tomented, but a broad stripe of greyish tomentum along eye-margin. On lower raised part of frons a well-marked, triangular, shining black callus. Mesonotal pile shorter than in male, and dorsocentrals therefore appearing very strong. Mesonotal coloration darker than in male, and wings more maculated. Legs as in male. Tergites 1–3 brownish-black and subshining as in male, but following tergites polished black and more or less brownish tomented laterally. Total length about 4.8 mm.

Material. Holotype, ♂ SOUTH AFRICA, Cape Province, 22 km. SE Langebaan, 60 m alt., coastal dunes and sandy plain, 18 Sept. 1972, M. E. Irwin (NM); paratypes, 4 ♂ 4 ♀, same data as holotype (NM & ZMC); same locality, 1 ♂ 1 ♀, 18 Aug. 1973, M. E. Irwin; 8 km W Lambert's Bay, coastal sand dunes, 1 ♂, 15 Sept. 1972, M. E. & B. J. Irwin (NM). NM type no. 1938.

REFERENCE

- LYNEBORG, L., 1972: A revision of the *Xestomyza*-group of Therevidae (Diptera).—*Ann. Natal Mus.* 21 (2): 297–376, 236 figs.

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